

What is claimed is:

1. A catheter assembly, comprising:

a first tube having a proximal end, a distal end, and a first lumen extending therethrough, wherein the lumen is in fluid communication with an expandable member proximate the distal end of the first tube;

a first port on the proximal end of the first tube in fluid communication with the first lumen; and

a seal releasably attached to the first port so as to substantially prevent the passage of air into the first lumen, wherein the first lumen has a pressure less than atmospheric pressure.

2. The catheter assembly in accordance with claim 1, wherein the expandable member is a balloon.

3. The catheter assembly in accordance with claim 1, wherein the seal comprises a polymer.

4. The catheter assembly in accordance with claim 1, wherein the seal comprises rubber.

5. The catheter assembly in accordance with claim 4, wherein the seal comprises a self-sealing rubber septum.

6. The catheter assembly in accordance with claim 1, wherein the seal comprises plastic.

7. The catheter assembly in accordance with claim 1, wherein the first tube includes a chemical coating capable of binding a quantity of CO₂, N₂, and O₂.

8. The catheter assembly in accordance with claim 1, wherein prior to use the first lumen is filled with a fluid.

9. A balloon catheter with a proximal end and a distal end, comprising:

a first tube having a proximal end, a distal end, and a first lumen extending therethrough, wherein the first tube includes a first port on a proximal end thereof in fluid communication with the first lumen;

a balloon disposed at the distal end of the catheter and in fluid communication with the first lumen; and

a seal releasably attached to the first port so as to substantially prevent the passage of air into the first lumen wherein the first lumen is substantially free of air therein.

10. The catheter in accordance with claim 9, wherein the seal comprises a polymer.

11. The catheter in accordance with claim 9, wherein the seal comprises rubber.

12. The catheter in accordance with claim 9, wherein the seal comprises a self-sealing rubber septum.

13. The catheter in accordance with claim 9, wherein the seal comprises plastic.

14. The catheter in accordance with claim 9, wherein the first tube includes a chemical coating capable of binding a quantity of CO₂, N₂, and O₂.

15. The catheter in accordance with claim 9, wherein prior to use the first lumen is filled with a fluid.

16. A method of preparing a balloon catheter, comprising the steps of:

providing a balloon catheter including a first tube having a proximal end, a distal end, and a first lumen extending therethrough, wherein the first tube has a first port in fluid communication with the first lumen, and a seal releasably attached to the first port so as to substantially prevent the passage of air into the first lumen with a balloon disposed proximate the distal end of the catheter in fluid communication with the first lumen;

providing a sealing device that is detachably connectable to the first port, wherein the sealing device includes a seal detachably secured therein;

connecting the sealing device to the first port;

using the sealing device to pull vacuum until the air pressure within the first lumen is substantially less than atmospheric pressure followed by placing the seal over the first port; and

disconnecting the sealing device from the first port.

17. The method in accordance with claim 16, wherein the seal comprises a polymer.

18. The method in accordance with claim 16, wherein the seal comprises rubber.

19. The method in accordance with claim 16, wherein the seal comprises a self-sealing rubber septum.

20. The method in accordance with claim 16, wherein the seal comprises plastic.

21. The method in accordance with claim 16, wherein the first tube includes a chemical coating capable of binding a quantity of CO₂, N₂, and O₂.